Efficient Photometry

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Agency:
Department of Defense

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Topic Number:
AF141-013

Description:
OBJECTIVE: Decrease the time burden of photometric collection using stars serendipitously collected with optical sensors without compromising calibration accuracy and data quality. DESCRIPTION: Photometric data collection techniques have become key for space surveillance. Photometric techniques can be used on most existing electro-optical sensors and have become a routine collection method. Photometric data contributes to space object identification and characterization techniques and are being utilized more than ever. However, current photometric methods are cumbersome, requiring 10-12 stars'calibrations to be collected in addition to the photometric collection of interest. The potential exists to reduce collection time 90% by eliminating this calibration time. Additionally, some data collected cannot be used, because star calibrations were not performed at the time of collection. This has the potential to significantly increase the capacity of operational sensors. New methods of photometric calibration are required that can take any image file, extract stars and any other objects in the field, and precisely (